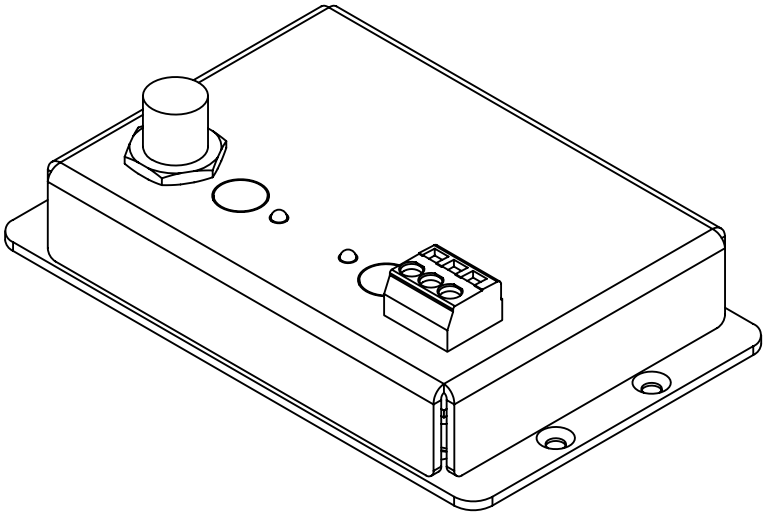
J1939 to NMEA2000® Adaptor
Part Numbers: 3185
USER MANUAL



Revision 1.00

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1 INTRODUCTION

The Offshore System's NMEA2000® 3185, J1939 to NMEA Adaptor is designed to convert Engine, Transmission and Generator messages on the J1939 network onto the NMEA2000® network. This unit is designed to operate in a protected marine environment such as an engine room. It is very important that it is installed and set up correctly according to this manual. Please read and follow the installation and setup instructions carefully to achieve the best results.

1.1 Firmware Revision

The information in this manual corresponds to firmware revision 1.00

1.2 Product Features

The 3185, J1939 to NMEA Adaptor has the following features:

- Connection to J1939 network using a 3 pole Wago cage clamp connector
- User Settable J1939 Address using a simple rotary switch
- Green LED confirming valid J1939 message reception.
- NMEA2000 micro C interface plug
- User Settable a NMEA Device Instance using rotary switch
- Blue LED confirming NMEA transmission
- NMEA2000 Interface optically isolated from J1939
- Power drawn only from NMEA2000 interface
- Panel or DIN rail mounting option

NOTE:

FOR SAFETY REASONS THIS UNIT DOES NOT HAVE THE CAPABILITY OF TRANSMITTING ANY MESSAGES ONTO THE J1939 NETWORK.

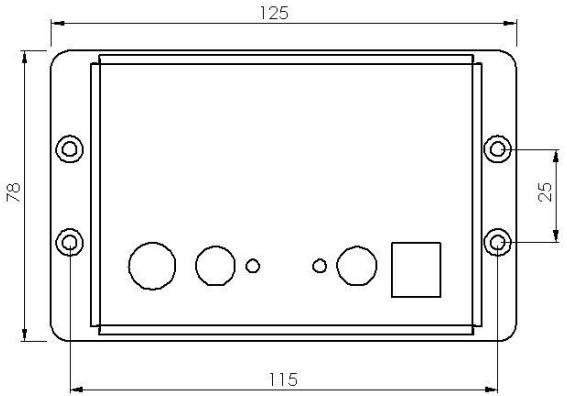
2 INSTALLATION

2.1 Unpacking the box

You should find the following items in the 3185 shipping box:
1 x 3185 J1939 to NMEA Adaptor
1 x Din Rail mounting Kit with 2 rail mounts and 4 countersunk M3 screws for rails
1 x 3185 User Manual (This document)

2.2 Mounting the unit

The unit can either be mounted to a flat surface using 4 mounting screws. The unit dimensions and mounting hole locations are shown on the following drawing.

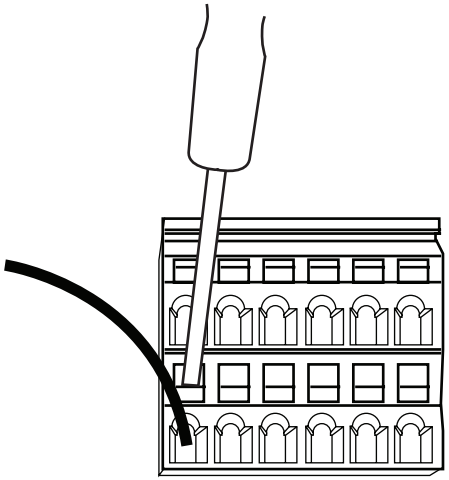


Or the unit can be Din Rails mounted by attaching the Din Rail mounts to the case using the supplied M3 CSK screws and then clipping the unit to the Din Rail

2.3 Connecting the NMEA2000 Cable

The unit is connected to the NMEA2000® network by the 5 way micro C socket on the front. Carefully attach the network drop cable to this plug and hand tighten until it it is fully seated. Take care to match the orientation of the pip inside the socket to the recess inside the drop cable plug. The other end of the drop cable should be connected to a suitable Tee connector on the NMEA2000 network backbone cable.

2.4 Connecting the J1939 cable to the WAGO socket



The cables from the power-source to the external sockets are connected using the WAGO Cage Clamp terminal block. The wire should be stripped for 8mm and then the cage clamp opened with a small screwdriver in the slot above the wire connection. Then simply insert the wire into it's connection slot and release the cage clamp by removing the small screw driver. This will produce a secure gas tight connection on wire sizes from 0.08 – 1.5 mm^2

2.5 J1939 Connections

The terminal connections are numbered as follows:

Terminal 1	CAN H (HIGH-level J1939 CAN bus line)
Terminal 2	Ground
Terminal 3	CAN L (LOW-level J1939 CAN bus line)

These are marked on the unit case.

3 CONFIGURATION

The following two items can be configured directly on the 3185 using the two small rotary switches. There are no other menu setups to worry about.

3.1 J1939 Source

The 3185 J1939 to NMEA Adaptor connects to the J1939 network and translates messages into the NMEA2000® network. The Source Address of the J1939 Engine and Transmission messages must match the J1939 Source set on the rotary switch as follows:

J1939 Source	Data Source
0	Port Engine / Transmission
1	Starboard Engine / Transmission

Any generator messages on the same J1939 network will be passed through regardless of the source address switch setting.

3.2 NMEA Device Instance

Each 3185 J1939 to NMEA Adaptor connected to the NMEA2000® network needs to have a unique Device Instance Address. The Device Instance of each unit is set by turning the small rotary switch with a small screw driver. Valid Device Instances range from “0” through to “F”.

J1939 Data Translated to NMEA2000®

Type	PGN No	Parameters
J1939 PGNs	PGN61443	Engine Percent Load
	PGN61444	Engine Speed Percent Torque
	PGN65270	Engine Turbocharger Boost Pressure
	PGN65262	Engine Oil Temperature Engine Coolant Temperature
	PGN65271	Alternator Potential (Voltage)
	PGN65266	Engine Fuel Rate
	PGN65253	Engine Total Hours Operation
	PGN65263	Engine Coolant Pressure Engine Fuel Delivery Pressure Engine Oil Pressure
	PGN65214	Engine Rated Speed
	PGN65260	Vehicle Identification Number
	PGN65242	Software Identification

	PGN61445	Transmission Current Gear
	PGN65272	Transmission Oil Pressure Transmission Oil Temperature
	PGN65030	Generator Average Line to Line Voltage Generator Average Line to Neutral Voltage Generator Average Frequency Generator Average Current

NMEA2000® Parameter Group Numbers (PGNs)

Type	PGN No	Parameters
Periodic Data PGNs	PGN127488	Engine Parameters
	PGN127489	Engine Parameters
	PGN127498	Engine Parameters
	PGN127493	Transmission Parameters
	PGN65030	Generator Average Basic AC Quantities
Protocol	PGN126464	Tx/Rx PGN List
	PGN126996	Product Information
	PGN059392	ISO Acknowledge
	PGN059904	ISO Request
	PGN060928	ISO Address Claim
	PGN126208	Command/Request Group

Electrical and Mechanical

Parameter	Value	Comment
Operating Voltage	9 to 16 Volts	DC Voltage
Power Consumption	120mA	Average Operating
Load Equivalence Number	3	LEN
Reverse Battery Protection	Yes	Indefinately
Load Dump Protection	Yes	SAE J1113
Size	mm	96 x 84 x 35
Weight	gr	120

Environmental

Parameter	Value
IEC 60954 Classification	Protected
Degree of Protection	IP40
Operating Temperature	-25°C to 50°C
Storage Temperature	-40°C to 70°C
Relative Humidity	93%RH @40° per IEC60945-8.2
Vibration	2-13.2Hz @ ±1mm, 13.2-100Hz @ 7m/s2 per IEC 60945-8.7

4 WARRANTY

Offshore Systems warrants this product to be free from defects in materials and workmanship for one year from the date of original purchase. If within the applicable period any such products shall be proved to Offshore Systems satisfaction to fail to meet the above limited warranty, such products shall be repaired or replaced at Offshore Systems option. Purchaser's exclusive remedy and Offshore Systems sole obligation hereunder, provided product is returned pursuant to the return requirements below, shall be limited to the repair or replacement, at Offshore Systems option, of any product not meeting the above limited warranty and which is returned to Offshore Systems; or if Offshore Systems is unable to deliver a replacement that is free from defects in materials or workmanship, Purchaser's payment for such product will be refunded. Offshore Systems assumes no liability whatsoever for expenses of removing any defective product or part, or for installing the repaired product or part or a replacement therefore or for any loss or damage to equipment in connection with which Offshore Systems products or parts shall be used. The foregoing warranties shall not apply with respect to products subjected to negligence, misuse, misapplication, accident, damages by circumstances beyond Offshore Systems control, to improper installation, operation, maintenance, or storage, or to other than normal use or service.

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WARRANTY RETURN PROCEDURE

To apply for warranty claims, contact Offshore Systems or one of its dealers to describe the problem and determine the appropriate course of action. If a return is necessary, place the product in its original packaging together with proof of purchase and send to an Authorized Offshore Systems Service Location. You are responsible for all shipping and insurance charges. Offshore Systems will return the replaced or repaired product with all shipping and handling prepaid except for requests requiring expedited shipping (i.e. overnight shipments). Failure to follow this warranty return procedure could result in the product's warranty becoming null and void.

Offshore Systems reserves the right to modify or replace, at its sole discretion, without prior notification, the warranty listed above.

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5 TECHNICAL SUPPORT

If you require technical support for any Offshore Systems products you can reach us using any of the following ways:

- Tel: +44(0)1425 610022
- Fax: +44(0)1425 614794
- Email: support@osukl.com
- Web: www.osukl.com
- Post: Offshore Systems UK Ltd
  Unit 10-11 Milton Business Centre
  Wick Drive, New Milton, Hampshire BH25 6RH

Offshore Systems (UK) Ltd
Unit 10-11 Milton Business Centre, Wick Drive,
New Milton, Hampshire, BH25 6RH, United Kingdom

Tel: +44(0)1425 610022 Fax: +44(0)1425 614794
Email: sales@osukl.com Web: www.osukl.com

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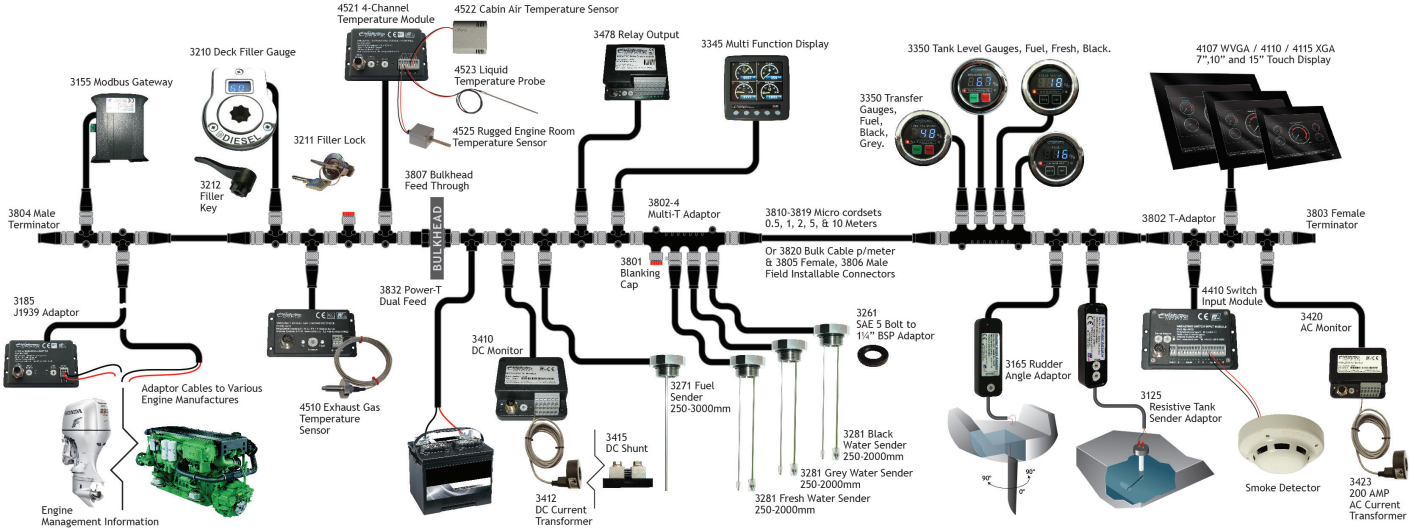
8 OFFSHORE SYSTEMS PRODUCT MAP

NMEA2000® VESSEL MONITORING AND CONTROL SYSTEMS


4521 4-Channel Temperature Module
4522 Cabin Air Temperature Sensor
3210 Deck Filler Gauge
3478 Relay Output
3345 Multi Function Display
3350 Tank Level Gauges, Fuel, Fresh, Black.
4107 WVGA / 4110 / 4115 XGA 7",10" and 15" Touch Display
3155 Modbus Gateway
4523 Liquid Temperature Probe
3350 Transfer Gauges, Fuel, Black, Grey.
3211 Filler Lock
4525 Rugged Engine Room Temperature Sensor
3212 Filler Key
3807 Bulkhead Feed Through
3804 Male Terminator
3802-4 Multi-T Adaptor
3810-3819 Micro cordsets 0.5, 1, 2, 5, & 10 Meters
3802 T-Adaptor
3803 Female Terminator
BULKHEAD
3801 Blanking Cap
Or 3820 Bulk Cable p/meter & 3805 Female, 3806 Male Field Installable Connectors
3185 J1939 Adaptor
3832 Power-T Dual Feed
3261 SAE 5 Bolt to 1¼" BSP Adaptor
4410 Switch Input Module
3420 AC Monitor
3410 DC Monitor
3165 Rudder Angle Adaptor
3125 Resistive Tank Sender Adaptor
Adaptor Cables to Various Engine Manufactures
4510 Exhaust Gas Temperature Sensor
3271 Fuel Sender 250-3000mm
3281 Black Water Sender 250-2000mm
3281 Grey Water Sender 250-2000mm
3281 Fresh Water Sender 250-2000mm
3415 DC Shunt
Smoke Detector
3412 DC Current Transformer
3423 200 AMP AC Current Transformer
Engine Management Information

Up to 16 each type of Sender can be installed on a single network